Nutrient/Nutritional Panel Testing

Policy # 00469
Original Effective Date: 10/21/2015
Current Effective Date: 04/10/2023

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc.(collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: Intracellular Micronutrient Analysis is addressed separately in medical policy 00311.

Note: Cardiovascular Risk Panels is addressed separately in medical policy 00398.

Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers nutrient/nutritional panel testing for all indications including but not limited to testing for nutritional deficiencies in individuals with mood disorders, fibromyalgia, unexplained fatigue and healthy individuals to be **investigational.***

Background/Overview

Nutritional panel testing aims to identify nutritional deficiencies that will lead to personalized nutritional supplement recommendations. Testing is proposed both for healthy individuals to optimize health and for patients with chronic conditions (eg, mood disorders, fibromyalgia, chronic fatigue) to specify supplements that will ameliorate symptoms.

Genova Diagnostics offers nutritional/nutrient panel testing. Among the tests this company offers is NutrEval®‡ FMV, which involves analysis of urine and blood samples and provides information on more than 100 markers including organic acids, amino acids, fatty acids, markers of oxidative stress (direct measurement of glutathione and CoQ10, and markers of oxidative injury and DNA damage) and nutrient elements (Table 1). Genova Diagnostics produces a report that includes test results categorized as minimal, moderate, or high need for support, along with recommendations for supplements and dosages for items categorized as high need. NutrEval FMV patient reports can recommend supplementation for any of the nutrients listed in Table 1 if they are found to be areas of high need.

NutrEval Plasma, also by Genova Diagnostics, is a similar test. The only difference between NutrEval FMV and NutrEval Plasma is that the former uses urine (first morning void) whereas the latter uses plasma (fasting sample) to measure amino acids.

SpectraCell Laboratories offers a micronutrient test that measures functional deficiencies at the cellular level. The test assesses how well the body uses 31 vitamins, minerals, amino and fatty acids, antioxidants, and metabolites (see Table 1). SpectraCell categorizes test results into adequate, borderline, and deficient, and offers supplementation suggestions based on each patient's deficiencies.

Table 1. Components of the NutrEval FMV and Spectra Cell Tests

Category	NutrEval FMV	Spectra Cell Nutrient Testing
Vitamins and antioxidants	Vitamin A, vitamin C, vitamin E, alpha-lipoic acid, coenzyme Q10, glutathione, plant-based antioxidants, B vitamins (thiamin B_1, riboflavin B_2, niacin B_3, pyridoxine B_6, biotin B_7, folic acid B_9, cobalamin B_{12})	Vitamin A, vitamin B_1, vitamin B_2, vitamin B_3, vitamin B_6, vitamin B_{12}, biotin, folate, pantothenate, vitamin C, vitamin D, vitamin K, alpha-lipoic acid, coenzyme Q10, cysteine, glutathione, selenium, vitamin E
Minerals	Magnesium, manganese, molybdenum, zinc	Calcium, magnesium, manganese, zinc, copper
Fatty acids	Omega-3-oils	
Digestive support	Probiotics, pancreatic enzymes	
Other vitamins	Vitamin D	
Amino acids	Arginine, asparagine, cysteine, glutamine, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, serine, taurine, threonine, tryptophan, tyrosine, valine	Asparagine, glutamine, serine
Metabolites		Choline, inositol, carnitine

Nutrient/Nutritional Panel Testing

Policy # 00469
Original Effective Date: 10/21/2015
Current Effective Date: 04/10/2023

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

Clinical laboratories may develop and validate tests in-house and market them as a laboratory service; laboratory-developed tests must meet the general regulatory standards of the Clinical Laboratory Improvement Amendments. Nutrient/nutritional panel testing using urine and/or blood samples is offered (eg, NutrEval FMV®‡ and NutrEval Plasma®‡ by Genova Diagnostics; micronutrient testing by SpectraCell) under the auspices of the Clinical Laboratory Improvement Amendments. Laboratories that offer laboratory-developed tests must be licensed by the Clinical Laboratory Improvement Amendments for high-complexity testing. To date, the U.S. Food and Drug Administration has chosen not to require any regulatory review of this test.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, technology evaluation centers, reference to federal regulations, other plan medical policies, and accredited national guidelines.

Multimarker nutritional panel testing is proposed for patients with certain chronic conditions (eg, mood disorders, fibromyalgia, unexplained fatigue) as well as for healthy individuals seeking to optimize health and/or fitness.

Summary of Evidence

For individuals who have mood disorders, fibromyalgia, or unexplained fatigue, or healthy individuals who seek to optimize health and fitness who receive nutritional panel testing, the evidence includes several systematic reviews and randomized controlled trials (RCTs) on the association between a single condition and a single nutrient and on the treatment of specific conditions with nutritional supplements. Relevant outcomes are symptoms, change in disease status, and functional outcomes. Systematic reviews have found statistically significant associations between depression or fibromyalgia and levels of several nutrients; however, there is little evidence that nutrient supplementation for patients with depression improves health outcomes. An RCT has also found statistically significant associations between fatigue and levels of vitamin D. However, there is no direct evidence on the health benefits of nutritional panel testing for any condition,

including testing healthy individuals, and no evidence that nutritional panel testing is superior to testing for individual nutrients for any condition. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Supplemental Information

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest. No guidelines or statements were identified.

U.S. Preventive Services Task Force Recommendations

The U.S. Preventive Services Task Force (USPSTF) has not addressed nutritional panel testing. The USPSTF has made several recommendations addressing screening for individual nutrients. The USPSTF concluded that there is insufficient evidence to recommend for or against screening for iron deficiency anemia in asymptomatic children, adolescents and pregnant women and vitamin D deficiency in asymptomatic, nonpregnant adults.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials

A search of ClinicalTrials.gov in October 2022 did not identify any ongoing or unpublished trials that would likely influence this review.

References

1. Genova Diagnostics. NutrEval FMV; https://www.gdx.net/product/nutreval-fmv-nutritional-test-blood-urine.
2. SpectraCell Laboratories Micronutrient Test Panel. https://www.spectracell.com/micronutrient-test-panel.

3. Petridou ET, Kousoulis AA, Michelakos T, et al. Folate and B12 serum levels in association with depression in the aged: a systematic review and meta-analysis. Aging Ment Health. Sep 2016; 20(9): 965-73. PMID 26055921
4. Cheungpasitporn W, Thongprayoon C, Mao MA, et al. Hypomagnesaemia linked to depression: a systematic review and meta-analysis. Intern Med J. Apr 2015; 45(4): 436-40. PMID 25827510
5. Swardfager W, Herrmann N, Mazereeuw G, et al. Zinc in depression: a meta-analysis. Biol Psychiatry. Dec 15 2013; 74(12): 872-8. PMID 23806573
6. Anglin RE, Samaan Z, Walter SD, et al. Vitamin D deficiency and depression in adults: systematic review and meta-analysis. Br J Psychiatry. Feb 2013; 202: 100-7. PMID 23377209
7. Hsiao MY, Hung CY, Chang KV, et al. Is Serum Hypovitaminosis D Associated with Chronic Widespread Pain Including Fibromyalgia? A Meta-analysis of Observational Studies. Pain Physician. Sep-Oct 2015; 18(5): E877-87. PMID 26431141
8. Daniel D, Pirotta MV. Fibromyalgia--should we be testing and treating for vitamin D deficiency?. Aust Fam Physician. Sep 2011; 40(9): 712-6. PMID 21894281
9. Gowda U, Mutowo MP, Smith BJ, et al. Vitamin D supplementation to reduce depression in adults: meta-analysis of randomized controlled trials. Nutrition. Mar 2015; 31(3): 421-9. PMID 25701329
10. Taylor MJ, Carney S, Geddes J, et al. Folate for depressive disorders. Cochrane Database Syst Rev. 2003; (2): CD003390. PMID 12804463
11. Nowak A, Boesch L, Andres E, et al. Effect of vitamin D3 on self-perceived fatigue: A double-blind randomized placebo-controlled trial. Medicine (Baltimore). Dec 2016; 95(52): e5353. PMID 28033244
12. U.S. Preventive Services Task Force (USPSTF). Vitamin D Deficiency: Screening. 2021; https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/vitamin-d-deficiency-screening.
13. U.S. Preventive Services Task Force (USPSTF). Iron Deficiency Anemia in Pregnant Women: Screening and Supplementation, 2015. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/iron-deficiency-anemia-in-pregnant-women-screening-and-supplementation.
14. U.S. Preventive Services Task Force (USPSTF). Iron Deficiency Anemia: Screening. 2015; https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/iron-deficiency-anemia-in-young-children-screening#fullrecommendationstart.

Nutrient/Nutritional Panel Testing

Policy # 00469
Original Effective Date: 10/21/2015
Current Effective Date: 04/10/2023

Policy History

Original Effective Date: 10/21/2015
Current Effective Date: 04/10/2023

10/08/2015	Medical Policy Committee review
10/21/2015	Medical Policy Implementation Committee approval. New Policy.
10/06/2016	Medical Policy Committee review
10/19/2016	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
10/05/2017	Medical Policy Committee review
10/18/2017	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/04/2018	Medical Policy Committee review
10/17/2018	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/03/2019	Medical Policy Committee review
10/09/2019	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/01/2020	Medical Policy Committee review
10/07/2020	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/07/2021	Medical Policy Committee review
10/13/2021	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/06/2022	Medical Policy Committee review
10/11/2022	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
03/02/2023	Medical Policy Committee review
03/08/2023	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

Next Scheduled Review Date: 03/2024

Nutrient/Nutritional Panel Testing

Policy # 00469
Original Effective Date: 10/21/2015
Current Effective Date: 04/10/2023

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2022 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	84999
HCPCS	No codes
ICD-10 Diagnosis	All related diagnoses

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into

standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
    1. Consultation with technology evaluation center(s);
    2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
    3. Reference to federal regulations.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.